

Abstract Submitted
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Laser Photodetachment Spectroscopy of the S_2^- Ion¹ JESSICA BARRICK, JOHN YUKICH, Davidson College — We have conducted low-resolution photodetachment spectroscopy of the S_2^- ion over a broad range of photon energies. The ions are created in an ion trap by a two-step dissociative attachment process. The detachment is achieved with a tunable ring-cavity titanium:sapphire laser. Evaporative cooling is used to remove the most energetic ions. The altered photodetachment spectroscopy is then compared to that of the non-cooled ions as a method of identifying detachment thresholds. Our results exhibit structure that may be due to vibrational energy levels. Future experiments will focus on high-resolution detachment spectroscopy of these and other ions.

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